REMARKS

Claims 1-3, 6-8, and 11-15 were presented for examination in the present application. The instant amendment adds new claims 16-18. Thus, claims 1-3, 6-8, and 11-18 are pending upon entry of the instant response. Claims 7, 11, and 14 have been withdrawn, but remain pending for rejoinder upon the allowance of generic claim 1.

Claims 1-3, 6, 12-13, and 15 were rejected under 35 U.S.C. §103 over U.S. Patent No. 5,688,331 to Aruga et al. (Aruga) in view of U.S. Patent No. 5,994,251 to Niwa (Niwa) and U.S. Publication No. 2002/0185487 to Divakar et al. (Divakar). Claim 8 was rejected under 35 U.S.C. §103 over Aruga and Niwa in view of U.S. Patent No. 5,044,311 to Mase et al. (Mase).

The Advisory Action asserts that Aruga discloses in the Abstract and column 7 hermetically sealing the stem, but fails to disclose a specific structure.

Applicants respectfully disagree. Specifically, Applicants submit that Aruga does disclose a specific sealing structure, but that this sealing structure does not disclose or suggest the seal ring of claim 1.

Independent claim 1 requires, in part, "a seal ring interposed between the first and second seal surfaces". Here, the first seal surface is "provided on the plate, shaped like a ring and surrounding the terminal", while the second seal surface is "shaped like a ring and extending along that end of the stem which supports the plate".

In the embodiment where a seal is provided, Aruga discloses (with respect to Figure 7) an O-ring groove 132 near the bottom of the stem 120 accommodates an 0-ring for making a seal through the wall of a processing chamber. See col. 7, lines 47-50. Clearly, this o-ring at the bottom of the stem is clearly not provided between the

plate and that end of the stem which supports the plate as claimed. Rather, the end of the stem that supports the plate in this embodiment of Aruga is bonded (see col. 8, lines 4-7) to the plate by ceramic pressure assisted densification (PAD) techniques and, not, a seal ring as claimed.

In sum, the embodiment of Aruga shown in Figure 2 fails to disclose the sealing structure between the plate 39 and the cylindrical member 25 because no such structure exists, but rather compensates for the leakage between these parts by continuously feeding inert gas into the cylindrical member 25 to create a pressure differential. In the other embodiment shown in Figure 7, Aruga discloses an o-ring between the bottom of the stem and the chamber wall, but not between the plate and cylindrical member. Thus, neither embodiment of Aruga gives any hint of a seal ring between the plate 39 and the cylindrical member 25.

While it might be argued that Aruga generally discloses a seal, Aruga never gives any hint that such a seal could occur between the plate and cylindrical member. In fact, Aruga specifically discloses against such a solution by disclosing that it is difficult to perfectly adhere the alumina cylindrical member 25 to the bottom of the aluminum nitride susceptor wafer support plate 39 to maintain a perfect gas tight seal. See col. 5, lines 1-5.

Thus, Aruga recognizes the problem of leakage but offers no way to form a seal between the plate and the cylindrical member. Rather, Aruga teaches away from such a solution.

Applicants respectfully submit that modifying Aruga to seal between plate 39 and the cylindrical member 25 as proposed by the Office Action is simply not disclosed or suggested by Aruga, but rather is specifically taught against by Aruga. As such, Aruga alone or in combination with Niwa, Mase, and/or Divakar, does not disclose claim 1, which requires a seal ring interposed between the first and second seal surfaces.

Notwithstanding the above, and merely in the interest of expediting prosecution, independent claim 1 has been clarified to require, in pertinent part, that the seal ring defines an unattached zone that is "all around between the inner and outer circumferential parts (emphasis added)".

Niwa discloses a seal ring 70 at least in FIG. 1C. However, the seal ring of Niwa clearly has a square sectional shape. Thus, the seal ring of Niwa clearly does not disclose or suggest seal ring having an unattached zone that is "all around between the inner and outer circumferential parts" as now recited by claim 1.

Divakar is merely asserted by the Office Action as disclosing that alumina is used for its low thermal conductivity and, not, a seal ring as claimed. Similarly, Mase is merely asserted by the Office Action as disclosing an alumina screw and, not, a seal ring as claimed.

Therefore, Applicants submit that the proposed combination of Aruga alone or in combination with Niwa, Mase, and/or Divakar, does not disclose clarified claim 1.

For at least the reasons set forth above, claim 1 is believed to be in condition for allowance. Claims 2-3, 6, 12-13, and 15 are also believed to be in condition for allowance for at least the reason that they depend from the aforementioned claim 1. Reconsideration and withdrawal of the rejections to claims 1-3, 6, 12-13, and 15 are respectfully requested.

Claims 16-18 have been added to point out various aspects of the present application. Applicants submit that new claims 16-18 are directed to the elected embodiment of Species A and the material of claim 6. Support for new claim 16 can be found in the specification at least at page 12, line 20. Support for new claims 17-18 can be found at least in original claims 1-15.

New claims 16-18 are believed to be in condition for allowance.

For example, claim 16 is believed to be in condition for allowance for at least the reason that it depends from the aforementioned claim 1. Additionally, claim 16 recites that the seal ring has "a cross section formed in an H-shape all around". Applicants respectfully submit that the cited art fails to disclose or suggest the claimed cross section. Rather, the seal ring of Niwa is disclosed, at least in FIG. 1C as a square sectional shape and, not, the claimed H-shape.

Independent claim 17 recites, in part, "a seal ring interposed between the first and second seal surfaces". Here, the first seal surface is "provided on the plate surrounding the terminal", while the second seal surface extends "along the first end" of the hollow cylinder stem.

As discussed in detail above with respect to claim 1, the cited art simply fails to disclose or suggest a seal ring interposed between the stem and the plate. Therefore, claim 17 is believed to be in condition for allowance. Claim 18 is believed to be in condition for allowance for at least the reason that it depends from the aforementioned claim 17.

Applicants respectfully request rejoinder of withdrawn claims 7, 11, and 14, which are also believed to be in condition for allowance for at least the reason that they depend from the aforementioned generic claim 1.

In view of the above, it is respectfully submitted that the present application is in condition for allowance.

If for any reason the Examiner feels that consultation with Applicants' attorney would be helpful in the advancement of the prosecution, the Examiner is invited to call the telephone number below.

Respectfully submitted,

October 13, 2006

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